

FROM McANDREWS, HELD, & MALLOY

(TUE) 10. 3' 00 10:25 /ST. 10:23/NO. 4861050409 P 19

APPENDIX C

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Attorney Docket No. 6599

CONTINUATION-IN-PART DECLARATION
AND POWER OF ATTORNEY

As below named inventor, I hereby declare that:

My residence, post office address and citizenship are stated below next to my name;

That I verily believe that I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

"MICROPROCESSOR CONTROLLED FAST
CHARGING SYSTEM AND METHOD"

described and claimed in the specification attached herewith or as filed on _____ as U.S. Serial No.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

CLAIM FOR BENEFIT OF EARLIER U.S./PCT APPLICATION(S) UNDER
35 U.S.C. 120

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U. S. APPLICATIONS FOR
BENEFIT UNDER 35 U.S.C. 120:

<u>U. S. APPLICATIONS</u>	<u>U. S. FILING DATE</u>	
(1) Ser. 385,830	June 7, 1982	(Now U.S. Patent No. 4,455,523)
(2) Ser. 612,588	May 21, 1984	(Now U.S. Patent No. 4,553,081)
(3) Ser. 797,235	November 12, 1985	(Now U. S. Patent No. 4,716,354)
(4) Ser. 876,194	June 19, 1986	(Now U. S. Patent No. 4,709,202)
(5) Ser. 944,503	December 18, 1986	(Now U. S. Patent No. 4,737,702)
(6) Ser. 168,352	March 15, 1988	(Pending)

I hereby appoint the following attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Sidney Neuman (Reg. No. 13907), Fred T. Williams (Reg. No. 14666), Theodore W. Anderson (Reg. No. 17035), Arthur A. Olson, Jr. (Reg. No. 17628), James R. Dowdall (Reg. No. 19749), Donald A. Peterson (Reg. No. 18647), William J. Birmingham (Reg. No. 17877), Joseph P. Calabrese (Reg. No. 17753), Gregory B. Beggs (Reg. No. 19286), Noel I. Smith (Reg. No. 18698), John J. Cavanaugh (Reg. No. 18372), Harry J. Roper (Reg. No. 22444), Michael O. Warnecke (Reg. No. 24345), James T. Williams (Reg. No. 25097), William M. Wesley (Reg. No. 26521), J. Bradford Leaheey (Reg. No. 27107), George S. Bosy (Reg. No. 29364), Herbert D. Hart, III (Reg. No. 30063), Nicholas A. Poulos (Reg. No. 30209), William H. Frankel (Reg. No. 30337), Donald W. Rupert (Reg. No. 29974), R. Lewis Gable (Reg. No. 22479), James P. Naughton (Reg. No. 30665), Todd P. Blakely (Reg. No. 31328), William P. Oberhart (Reg. No. 31861), Robert W. Fieseler (Reg. No. 31826), Hugh A. Abrams (Reg. No. 31,937), Raymond N. Nimrod (Reg. No. 31,987), Richard A. Cederoth (Reg. No. 31336), Philip T. Petti (Reg. No. 31651), Van Metre Lund (Reg. No. 16968), and John H. Sherman (Reg. No. 16909).

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date November 1, 1988

Steven E. Koenck

Steven E. Koenck

Full Name of Inventor: STEVEN E. KOENCK

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Citizenship: United States of America

Attorney Docket No. 6599

CERTIFICATE OF MAILING
NO. B230 060 08YIN THE UNITED STATES PATENT AND TRADEMARK OFFICEAPPLICATION FOR PATENTTITLE: "MICROPROCESSOR CONTROLLED FAST
CHARGING SYSTEM AND METHOD"S P E C I F I C A T I O NCROSS-REFERENCE TO RELATED APPLICATIONS

Reference is made pursuant to 35 U.S.C. §120 to pending application U.S. Serial No. 168,352 filed March 15, 1988. Said pending application refers under 35 U.S.C. §120 to earlier applications U.S. Serial No. 944,503 filed December 18, 1986 (now U.S. patent 4,737,702 issued April 12, 1988), U.S. Serial No. 876,194 filed June 19, 1986 (now U.S. Patent 4,709,202 issued November 24, 1987), and U.S. Serial No. 797,235 filed November 12, 1985 (now U.S. Patent 4,716,354 issued December 29, 1987). Said applications Serial No. 797,235, Serial No. 876,194, Serial No. 944,503 and Serial No. 168,352 refer, pursuant to 35 U.S.C. §120 to earlier application Serial No. 612,588 filed May 21, 1984 (now U.S. Patent 4,553,081 issued November 12, 1985), which is a continuation-in-part of earlier application Serial No. 385,830 filed June 7, 1982 (now U.S. Patent 4,455,523 issued June 19, 1984), and all five of these earlier applications are also referred to herein in accordance with the provisions of 35 U.S.C. §120.

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INCORPORATION BY REFERENCE

The disclosures and drawings of the above-mentioned U.S. Patents 4,455,523, 4,553,081 and 4,737,702, and of the pending application U.S. Serial No. 168,352 are hereby incorporated herein by reference in their entirety.

BACKGROUND OF THE INVENTION

NiCad (nickel-cadmium) battery technology has been employed successfully in portable hand-held applications for many years. Photographic equipment, power tools, data terminals, personal radio transceivers and pagers commonly utilize NiCad batteries as a power source. The charging systems that have been provided with these products have ranged from a simple transformer/rectifier type to rather complex systems to monitor and control the charging function. An increasing need is the ability to charge NiCad batteries quickly. To reliably and efficiently charge NiCad batteries at high rates requires careful control of the charging operation to avoid damage to the cells, particularly under extreme ambient temperature conditions.

The NiCad charge cycle consists of two basic parts: the coulombic portion and the overcharge portion. The coulombic portion of the charge cycle is characterized by the fact that most of the charge that is applied to the battery is stored in the form of electrochemical energy. This portion of the charge cycle is slightly endothermic, consequently high charge currents may be applied during this time without resulting in temperature



Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

FILING RECEIPT

CORRECTED

SERIAL NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTORNEY DOCKET NO.	DRWGS	TOT CL	IND CL
07/266,537	11/02/88	212	\$ 446.00	6599	28	26	4

NEUMAN, WILLIAMS, ANDERSON & OLSON
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CHICAGO, IL 60602

Receipt is acknowledged of the patent application identified herein. It will be considered in its order and you will be notified as to the examination thereof. Be sure to give the U.S. SERIAL NUMBER, DATE OF FILING, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this transmittal.

Applicant(s)

STEVEN E. KOENCK, CEDAR RAPIDS, IA.

FOREIGN FILING LICENSE GRANTED 04/14/89

TITLE

MICROPROCESSOR CONTROLLED FAST CHARGING SYSTEM AND METHOD

PRELIMINARY CLASS: 320

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MAY 10 1989

ENT'D

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(see reverse)

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